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Legal abortions among teenagers in Canada, 1974 through 1978

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Between August 1969, when the amendment to the Criminal Code went into effect, and December 1978 about 397 000 legal abortions were performed in hospitals with therapeutic abortion committees in Canada. During the 5-year period 1974-78 abortions in females under 20 years of age accounted for 30.9% of all the legal abortions performed in Canada on Canadian residents, and the abortion rate per 1000 women aged 15 to 19 years increased from 13.6 to 16.3. During 1974-77 the proportion of women in whom the gestation period was more than 12 weeks at the time of abortion was 25.3% for teenagers (females under 20 years of age) but only 14.6% for women aged 20 years or over. In 1976 the teenage abortion rate was lower in Canada (14.5) than in the United States (36.2), Sweden (28.5), Hungary

(26.4), Denmark (26.0), Norway (22.7), Finland (20.3), and England and Wales (15.4).

Entre la date d'entrée en vigueur de la loi de 1969 modifiant le Code criminel et décembre 1978 environ 397 000 avortements légaux ont été pratiqués dans les hôpitaux dotés d'un comité d'avortement thérapeutique au Canada. Au cours de la période de 5 ans allant de 1974 à 1978 les avortements subis par les femmes âgées de moins de 20 ans ont représenté 30.9% des avortements légaux pratiqués sur des femmes résidentes au Canada, et le taux d'avortement pour 1000 femmes âgées de 15 à 19 ans est passé de 13.6 à 16.3. Entre 1974 et 1977 la proportion de femmes dont la période de gestation s'étendait sur plus de 12 semaines au moment de l'avortement s'établissait à 25.3% chez les adolescentes (les femmes âgées de moins de 20 ans) mais n'était que 14.6% chez les femmes de 20 ans ou plus. En 1976 le taux d'avortement chez les adolescentes du Canada (14.5) était inférieur à celui des adolescentes des États-Unis (36.2), de la Suède (28.5), de la Hongrie (26.4), du Danemark (26.0), de la Norvège (22.7), de la Finlande (20.3), et de l'Angleterre et du Pays de Galles (15.4).

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In Canada the Criminal Law Amendment Act, 1969 (Bill C-150)¹ was given royal assent in 1969 and its provisions went into effect Aug. 26 that year. The law

was changed to allow a therapeutic abortion to be performed if, in the opinion of a therapeutic abortion committee (a committee attached to a hospital and comprising no fewer than three doctors), the continuation of the pregnancy would or would be likely to endanger the mother's life or health. The abortions would be carried out by qualified medical practitioners in accredited or approved hospitals.

This paper provides information about the legal (therapeutic) abortions performed in this country between 1974 and 1978 on Canadian teenagers (females under 20 years of age), along with comparable international statistics.

Sources of data

Statistics Canada is the main source of statistics on population, legal abortions and live births in Canada. It collects and coordinates data on the legal abortions performed in participating hospitals in the provinces and territories. The Canadian information analysed in this paper was extracted from annual reports on therapeutic abortions released by Statistics Canada² plus computer print-outs of information on the subject; national statistics on the mother's age (sometimes estimated) and other selected demographic and medical characteristics were available starting with the year 1974. The international statistics were extracted from a fact book published in 1979 by the Population Council.³ The Canadian data are the most up to date, complete and accurate on therapeutic abortions.

Analysis

The population of Canada in 1978 was estimated at 23.48 million, of which 11.81 million (50.3%) were female; the 1.16 million females aged 15 to 19 years constituted 21.1% of the 5.53 million females aged 15 to 44 years. Of the approximately 360 000 registered live births in 1976 about 11% were to females under 20 years of age. In 1970, the first complete calendar year following the amendment of the abortion law, the number of reported legal abortions performed in Canada on Canadian residents was 11 152. The figure sharply increased to 30 923 in 1971 and to 62 290 by 1978. The total number of abortions between the time the amendment came into effect and December 1978 was about 397 000.

The number of pregnancies throughout the world terminated each year by induced abortion is not known. Recent estimates have ranged from 30 million to 55 million;³ the corresponding abortion rates would be 40 to 70 per 1000 females of reproductive age. But these global aggregates are highly speculative since they are based on estimates that are, in many cases, of questionable validity.

In the period 1974-78 teenagers (females under 20 years of age) underwent 84 039 (30.9%) of the 271 779 reported legal abortions performed in Canada on Canadian residents; the yearly number (average, roughly 16 800) gradually increased from 15 162 in 1974 to 18 976 in 1978 (Table I). Of these teenagers 13% were under 16 years of age, 38% were 16 or 17 years old and 49% were 18 or 19 years old.

The abortion rate for all women is defined as the yearly number of abortions per 1000 women aged 15 to 44 years, and the abortion rate for all teenagers is defined as the yearly number of abortions per 1000 women aged 15 to 19 years. Both rates increased in Canada about 19% between 1974 and 1978, from 9.5 to 11.3 and from 13.6 to 16.3 respectively (Table I).

The total number of legal abortions and the abortion rates for all women and all teenagers increased steadily between 1974 and 1977 in Canada and the United States but were stable or declined in the other countries studied (Tables II and III). However, while

Table I—Numbers and rates of legal abortions performed in Canada on Canadian residents in 1974-78

Variable	1974	1975	1976	1977	1978
Total no. of abortions	48 136	49 311	54 478	57 564	62 290
Abortions in women under 20 years of age:					
No.	15 162	15 447	16 731	17 723	18 976
%	31.5	31.3	30.7	30.8	30.5
Rate per 1000 women aged					
15-44 yr	9.5	9.5	10.3	10.6	11.3
15-19 yr	13.6	13.6	14.5	15.2	16.3
Annual percent increase in abortion rate for women aged					
15-44 yr	—	0	8.4	3.0	6.6
15-19 yr	—	0	6.7	4.9	6.5

Table II—Total numbers of legal abortions and percentages performed on teenagers in selected countries in 1974-77^a

Country or countries	Legal abortions; total no. (and % performed on teenagers)*			
	1974	1975	1976	1977
Canada	48 136 (31.5)	49 311 (31.3)	54 478 (30.7)	57 564 (30.8)
United States	898 600 (32.7)	1 034 200 (33.1)	1 179 300 (32.1)	1 270 000 (NA)
England and Wales	109 400 (25.5)	106 200 (26.5)	101 900 (27.3)	102 700 (27.8)
Denmark	24 900 (14.4)	27 900 (16.2)	26 800 (17.5)	25 700 (18.0)
Finland	22 800 (16.0)	21 500 (19.2)	19 800 (19.8)	NA (NA)
Hungary	102 000 (11.0)	96 200 (10.7)	94 700 (10.3)	89 100 (10.7)
Norway	15 200 (NA)	15 100 (NA)	14 800 (23.2)	15 500 (24.6)
Scotland	7 600 (26.2)	7 300 (27.6)	7 200 (29.6)	7 300 (NA)
Sweden	30 600 (24.5)	32 500 (23.8)	32 400 (22.9)	31 200 (21.6)

*NA = not available when the table was prepared.

Table III—Abortion rates for all women and all teenagers in selected countries in 1974–77^a

Country or countries	No. of abortions per 1000 women; age, yr							
	15–44				15–19			
	1974	1975	1976	1977	1974	1975	1976	1977
Canada	9.5	9.5	10.3	10.6	13.6	13.6	14.5	15.2
United States	19.6	22.1	24.5	25.8	28.6	33.1	36.2	NA
England and Wales	11.6	11.2	10.6	10.6	16.4	16.2	15.4	15.4
Denmark	24.2	27.0	25.8	24.4	19.9	25.1	26.0	25.6
Finland	21.8	20.4	18.6	NA	18.5	21.2	20.3	NA
Hungary	44.3	41.9	41.5	39.2	27.0	26.6	26.4	26.8
Norway	20.0	19.7	19.0	19.7	NA	NA	22.7	25.4
Scotland	7.4	7.1	6.9	6.9	9.6	9.7	NA	NA
Sweden	19.2	20.2	20.0	19.2	28.6	29.7	28.5	NA

Table IV—Abortion rates and ratios, and percent distribution of live births for Canadian teenagers in 1974–77

Variable	Age, yr*					
	< 15	15	16	17	18	19
No. of abortions per 1000 women (abortion rate)	1.0	7.9	13.0	15.5	17.7	17.4
No. of abortions per 100 live births and abortions (abortion ratio)	44.0	36.4	31.2	26.0	22.5	18.6
% of live births to women under 20 years of age	0.9	3.4	10.3	19.5	28.2	37.6
Proportion of women undergoing abortion after at least one previous delivery	0.4	0.8	2.3	5.1	9.6	14.2

*The mother's age at the time of conception was considered for the first two variables and her age at the time of abortion for the other two.

the proportion of abortions performed in teenagers was stable in Canada and the United States it increased modestly in most of the other countries (Table II). The abortion rates in Canada were relatively low (Table III).

Between 1974 and 1977 the abortion rate in Canadian teenagers (based on the female population of each age) steadily increased with increasing age of the woman at the time of conception, whereas the abortion ratio (based on numbers of live births and abortions) showed the reverse trend (Table IV), indicating that the number of live births increased more rapidly than the number of abortions. In 1974–78 the proportion of teenagers with at least one previous delivery increased slightly (from 7.1% to 7.8%), as did the proportion with at least one previous induced abortion (from 4.2% to 6.0%). The proportion with at least one prior spontaneous abortion was stable (Table V).

Table V—Proportions of Canadian teenagers undergoing an abortion in Canada in 1974–78 after at least one previous delivery or abortion

Year	Total no. of abortions in all teenagers	% of teenagers undergoing abortion after at least one previous		
		Delivery	Spontaneous abortion	Induced abortion
1974	15 162	7.1	1.0	4.2
1975	15 447	7.0	1.1	4.5
1976	16 731	7.5	1.3	5.0
1977	17 723	7.6	1.1	5.7
1978	18 976	7.8	1.1	6.0

Table VI—Distribution of abortions in Canada according to maternal age and gestation period and rate of complications in 1974–77

Gestation period, wk	Distribution of abortions, % (and % with complications); maternal age, yr	
	< 20	≥ 20
< 9	16.2 (1.5)	25.9 (0.8)
9–12	58.5 (1.8)	59.5 (1.2)
> 12	25.3 (12.6)	14.6 (11.3)
Total	100.0 (4.5*)	100.0 (2.6*)

*When standardized for differences in distribution by gestation period, 3.9 and 3.1 respectively.

In Canada, as recommended by the World Health Organization in 1970,⁴ the gestation period is considered to be the interval between the date of onset of the last normal menses and the date of expulsion or removal of the fetus from its mother. This information was available for about 96% of the Canadian abortions between 1974 and 1977; in the remaining 4% of cases the attending physician provided a clinical estimate of the gestation period. This period exceeded 12 weeks in more than 25% of the women under 20 years of age compared with less than 15% of the women aged 20 years or over (Table VI). However, the proportion of abortions performed after a gestation period of more than 12 weeks declined over the 5-year period by 6.1 percentage points for women under 20 years of age and 4.9 percentage points for women aged 20 years or over. Induced abortions are generally safe up to 12 weeks' gestation; thereafter the risk of complications is higher. The complication rates in the Canadian women, when standardized for differences in distribution by gestation period, did not differ much between the two age groups, but the overall rate for the teenagers was higher because they were more likely to have late abortions. The complications reported were retained products of conception (69%), laceration of the cervix (12%), hemorrhage (8%), infection (7%), and perforation of the uterus and others (4%).

Discussion

After the Canadian abortion law was liberalized in 1969 the total number and the rate of abortions in residents of Canada increased each year between 1970 and 1978. Similar increases occurred in the United States, where abortion laws were liberalized around the same time. The increases in Canada reflect a response by women to the liberalization of the abortion law, the increase in the number of hospitals providing abortion facilities, the interpretation of the abortion law by hospital therapeutic abortion committees and, perhaps, changes in the attitudes and beliefs of individual doctors about induced abortion. However, the overall abortion rates and the rates for teenagers are lower in Canada than in most of the developed countries for which statistics on legal abortions are available. This may be due to variations in local abortion laws, population structure, social and economic conditions, personal attitudes and beliefs about abortion, and knowledge and practice of methods of birth control.

In Canada more than 25% of the teenagers undergoing an abortion in 1974-77 were more than 12

weeks' pregnant at the time of the abortion, in contrast to only 15% of the women over 19 years of age. This difference explains the higher rate of complications in the teenagers.

The high proportion of abortions performed in teenagers, the slowly rising rate of teenage abortion and the high rate of complications in teenagers underline the need for improved birth control education for Canadian teenagers.

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Platelet regeneration time and late occlusion of aortocoronary saphenous vein bypass grafts

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The half-time for platelet regeneration was estimated in 16 patients with aortocoronary vein grafts by the use of a non-radioisotopic technique based on the permanent inhibition by acetylsalicylic acid of lipid peroxidation by platelets. Ten patients had patent grafts after 6 years; in the other six at least one graft had become occluded between 2 and 6 years after the operation as shown by serial angiography. The mean half-time (\pm the standard error) for platelet regeneration was reduced to 2.5 ± 0.2 days ($P < 0.002$) in the group with occluded grafts as compared with 3.3 ± 0.1 days in those with patent grafts and 3.5 ± 0.1 days in 11 healthy volunteers. These results suggest a relation between late graft occlusion and platelet turnover and support the idea that patients with aortocoronary vein grafts could benefit from platelet suppressive therapy. Finally, the method employed appears to be a useful and simple way of evaluating platelet function in vivo.

On a mesuré le demi-temps de régénération plaquettaire chez

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16 patients avec greffons veineux aortocoronariens selon une méthode non radioisotopique basée sur l'inhibition permanente par l'acide acétylsalicylique de la peroxydation des lipides plaquettaires. Dix patients présentaient des greffons perméables après 6 ans; chez les six autres au moins un greffon s'était obstrué entre 2 et 6 ans après l'opération tel que documenté par des angiographies successives. Le demi-temps moyen (\pm l'erreur type) de régénération plaquettaire était réduit à 2.5 ± 0.2 jours ($P < 0.002$) dans le groupe avec greffons obstrués en comparaison de 3.3 ± 0.1 jours chez ceux avec greffons perméables et de 3.5 ± 0.1 jours chez 11 volontaires sains. Ces résultats suggèrent une relation entre l'occlusion à évolution tardive des greffons et le cycle de remplacement des plaquettes et appuient l'hypothèse où les patients avec greffons veineux aortocoronariens pourraient bénéficier d'un traitement antiplaquettaire. Enfin, la méthode employée s'est révélée simple et utile pour l'étude de la fonction plaquettaire in vivo.

Measuring the platelet survival time is currently one of the most reliable ways of evaluating platelet involvement in various diseases and assessing the effectiveness of antiplatelet drugs in vivo.

Reduced platelet survival has been reported in several clinical conditions, including angina pectoris, myocardial infarction and thromboembolism.¹ Damage to the blood vessel wall and changes in the platelet surface modify platelet survival² and are believed to be responsible for increased platelet consumption. As plate-